UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,876	03/22/2006	Junpei Tsuji	Q93781	3669

23373 7590 08/14/2007

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
WITHERSPOON, SIKARL A	

ART UNIT	PAPER NUMBER
1621	

MAIL DATE	DELIVERY MODE
08/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/572,876	TSUJI ET AL.	
	Examiner	Art Unit	
	Sikarl A. Witherspoon	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/22/06, 7/28/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuji et al (US 2003/0032822) and Boodman et al (US 4,075,254) in combination.

The instant claims are drawn to a method for producing propylene oxide by oxidizing cumene to cumene hydroperoxide, reacting said hydroperoxide with propylene to produce propylene oxide and cumyl alcohol, and then reforming cumene from cumyl alcohol and recycling said cumene [1% or less] to oxidation step (to make hydroperoxide).

Tsuji et al teach a process for making propylene oxide wherein first, isopropylbenzene (cumene) is oxidized to produce the hydroperoxide; second, the hydroperoxide is reacted with propylene in an epoxidation step, to produce propylene oxide and cumyl alcohol; then, subjecting cumyl alcohol to hydrogenolysis to obtain cumene, which is recycled to oxidation step (abstract).

The differences between Tsuji et al and the instant claims are that the reference does not expressly teach recycling cumene at 1% by weight or less, and does not teach dehydration/hydrogenation of cumyl alcohol to produce cumene.

Regarding the first difference, the instant claims are found prima facie obvious because although the reference does not recite a specific example wherein only 1% by weight of cumene is recycled, it would have been obvious to a person having ordinary skill in the art to minimize the amount of cumene recycle to oxidation stage, since too much cumene would result in a high concentration of the hydroperoxide upon oxidation, which as taught by Tsuji et al decomposed during hydrogenolysis and is converted into acetophenone, which causes a loss of cumene (p 2, 0016).

Regarding the second difference, Boodman et al teach a process for the hydrogenation of an alkylstyrene (produced by dehydration of cumyl alcohol), especially, alpha-methylstyrene, to the corresponding alkylbenzene, i.e. cumene, using hydrogen streams containing up to 30 % by volume of carbon monoxide (abstract).

In view of the combined reference teachings, it would have been obvious to a person having ordinary skill in the art, at the time the present invention was made, to produce the cumene reactant either by dehydration/hydrogenation or hydrogenolysis of cumyl alcohol, since both methods are an effective means for producing cumene.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5-8 of copending Application No. 10/572,450. Although the conflicting claims are not identical, they are not patentably distinct from each other because the main difference is that the claims in the co-pending application produce cumene, and subsequently propylene oxide using hydrogen having 0.1 to 10% by volume of carbon monoxide. The fact that the instant claims do not recite this limitation is not a patentable limitation over the co-pending application because the instant claims do not preclude the use of a hydrogen stream comprising some carbon monoxide therein.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of copending Application No. 10/572,876. Although the conflicting claims are not identical, they are not patentably distinct from each other because the main difference is that the instant claims produce

propylene oxide by way of a process wherein 1% of less of cumene is recycled to oxidation steps; claims in the co-pending application do not contain such a limitation. This is not a patentable limitation over the co-pending application because the instant claims recite such a recycle step, and it would have been obvious to a person having ordinary skill in the art to minimize the amount of cumene recycled to oxidation stage, since too much cumene would result in a high concentration of the hydroperoxide upon oxidation, which is decomposed during hydrogenolysis and is converted into acetophenone, which causes a loss of cumene

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

saw

Sikarl A. Witherspoon
SIKARL A. WITHERSPOON
PRIMARY EXAMINER